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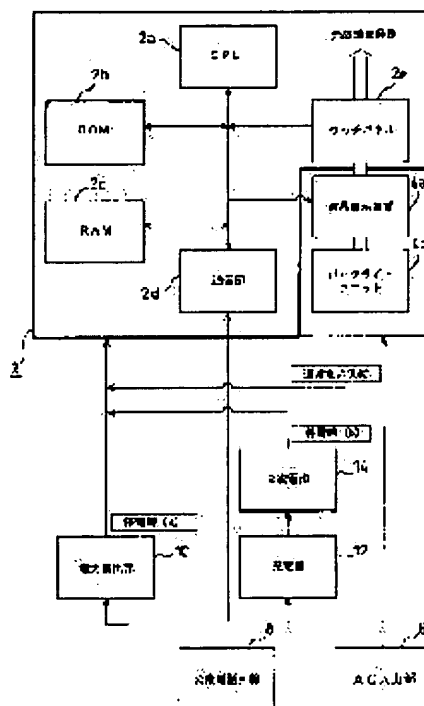
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(54) COMMUNICATION EQUIPMENT WITH COMPOSITE FUNCTION

(57)Abstract:

PROBLEM TO BE SOLVED: To continue communication after restoration from a power failure without losing transmitted data by allowing communication equipment to have provision for a power failure in various ways depending on a communication state and a data type.

SOLUTION: When a main power supply fails while own communication equipment sends data to opposite communication equipment, it is checked whether or not data reception by the opposite communication equipment is disabled. In the case that the data reception by the opposite communication equipment is disabled, control takes over communication interrupt processing, but in the case that the data reception by the opposite communication equipment is available, the type of data sent at present is discriminated. When it is detected that the data sent at present is an electronic mail, the communication interrupt processing is made after the data transmission sent at present is finished, and information already sent is stored in a RAM 2c, and when the power failure is recovered, the content of data already sent is displayed.



LEGAL STATUS

[Date of request for examination]

CLAIMS

[Claim(s)]

[Claim 1] The 1st processing actuation which detects the condition of a main power supply, and the 2nd processing actuation which detects whether data will communicate at the time of interruption of service if it detects that the result of said 1st processing actuation is in the interruption-of-service condition of a main power supply, The 3rd processing actuation to which the result of said 2nd processing actuation detects whether the communication link whose transmission place or receiving origin is data while data are communicating is possible, It is the communication device with a compound function characterized by the ability to carry out 4th processing actuation which distinguishes the classification of said data according to each function when the communication link whose result of said 3rd processing actuation is data is possible, and 5th processing actuation which performs necessary actuation according to the result of said 3rd processing actuation.

[Claim 2] The communication device with a compound function according to claim 1 characterized by implementation of necessary processing actuation being possible from the time amount which the communication link of said data in the time of day relevant to interruption of service of a main power supply furthermore takes, and the capacity of said auxiliary power.

[Claim 3] The communication device with a compound function according to claim 2 characterized by being what the contents of processing actuation necessary [said] carry out data processing of whether the completion of a communication link of said commo data is possible from said time amount and capacity, and carries out communication link actuation so that the communication link of said data may be made to complete, when the result of an operation that the completion of a communication link is possible is obtained.

[Claim 4] claim 1 characterized by said auxiliary power being a rechargeable battery thru/or 3 - a communication device with a compound function given in either.

[Claim 5] when a main power supply is in an energization condition, an entry-of-data control unit displays -- having -- a touch -- with the touch type input member made operational The touch type input auxiliary member which is automatically installed on said touch type input member, and serves as instead of [of said input control unit] when it is in the interruption-of-service condition of said main power supply and an input control unit is not displayed on said touch type input member, claim 1 characterized by providing thru/or 4 -- a communication device with a compound function given in either.

[Translation done.]

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the communication device with a compound function equipped with the necessary control function at the time of interruption of service of a power source.

[0002]

[Description of the Prior Art] When transmitting processing of FAX is abortive by un-completing, after a user enables retransmission of message of FAX or during - scheduled time transmits a message from the display or the record in the condition of not completing, on the occasion of interruption of service, there is equipment which changes to interruption-of-service mode automatically, as described by the publication-number No. 54161 [six to] official report as a conventional technique of the communication device equipped with the necessary control function at the time of interruption of service of a power source. There is equipment which gave directions of dispatch to the direct pulse / tone dialer with the output of a touch output detector on the occasion of interruption of service as described by the Provisional-Publication-No. No. 262547 [62 to] official report as other conventional techniques of still such a communication device.

[0003]

[Problem(s) to be Solved by the Invention] In recent years, although many communication devices with a compound function with which simultaneous-possession-ization of functions, such as FAX, an electronic mail, and personal computer communications, progressed have been commercialized, since a communication device receives the equipment which has only the function of ** - with the above-mentioned conventional technique, it is difficult a communication device to fully demonstrate the function to such a communication device with a compound function according to the interruption-of-service condition of a main power supply, although activation of fixed processing is possible.

[0004] Moreover, it was what continues the present processing, or does not hold data, or is only performing ** --correspondence of notifying having gone into the interruption-of-service condition when a main power supply fails for power with the above-mentioned conventional technique, cannot perform additional correspondence beyond it, but is inferior to the usability in a communication device with a compound function.

[0005]

[Means for Solving the Problem] The 2nd processing actuation which will detect [of data] whether it is under communication link at the time of interruption of service if this invention detects that the result of the 1st processing actuation which detects the condition of a main power supply, and said 1st processing actuation is in the interruption-of-service condition of a main power supply, The 3rd processing actuation to which the result of said 2nd processing actuation detects whether the communication link whose transmission place or receiving origin is data while data are communicating is possible, The 4th processing actuation which distinguishes the classification of said data according to each function when the communication link whose result of said 3rd processing actuation is data is possible, The above-mentioned technical problem is solved by having considered as the communication device with a compound function characterized by the ability to carry out 5th processing actuation which performs necessary actuation according to the result of said 3rd processing actuation.

[0006]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained in detail with reference to a drawing. Although for example, a FAX function, an electronic mail

function, personal computer communication facility, etc. occur as a compound function in the communication device with a compound function of this invention, as this function, it is not limited to this.

[0007] (Gestalt 1 of operation) When the communication device with a compound function applied to the gestalt 1 of operation of this invention with reference to drawing 1 is explained, 2 is the touch panel recognition data-processing section. This touch panel recognition data-processing section 2 consists of CPU2a, ROM2b, RAM2c, 2d of the communications departments, and transparence touch panel 2e. 4 is the liquid crystal back light section. This liquid crystal back light section 4 consists of liquid crystal display 4a and back light unit 4b. The body of equipment of the communication device concerned consists of this touch panel recognition data-processing section 2 and the liquid crystal back light section 4. For AC input section and 8, as for the power extraction section and 12, a dial-up line and 10 are [6 / a battery charger and 14] rechargeable batteries.

[0008] The alternating current power from AC input section 6 is supplied to the touch panel recognition data-processing section 2 and the liquid crystal back light section 4 as power required for these drives as power of a main power supply, respectively.

[0009] Moreover, the alternating current power from AC input section 6 is accumulated in the rechargeable battery 14 through the battery charger 12, and the power accumulated in this rechargeable battery 14 is supplied to the touch panel recognition data-processing section 2 and the liquid crystal back light section 4 as power of auxiliary power, when AC input section 6 which is a main power supply fails for power.

[0010] On the other hand, when AC input section 6 which is a main power supply fails for power, the power extraction section 10 supplies this extracted power to the touch panel recognition data-processing section 2 and the liquid crystal back light section 4 which are a body of equipment as power of auxiliary power, while extracting power from a dial-up line 8.

[0011] the gestalt 1 of this operation here -- auxiliary power -- a rechargeable battery 14 side and the power extraction section 10 side -- respectively -- since -- it is constituted possible [supply] by the body of equipment.

[0012] In this case, auxiliary power is supplied from any by the side of a rechargeable battery 14 and the power extraction section 10, or one side. In this case, when auxiliary power is a rechargeable battery 14, comparatively big power can supply the body of equipment. When following, for example, not using the liquid crystal back light section 4 for the body of equipment, power may be made to be supplied to the body of equipment only from the power extraction section 10, and when using the liquid crystal back light section 4, power may be made to be supplied from a rechargeable battery 14. The drive of the liquid crystal back light section 4 takes big power because back light unit 4b is contained in it. In addition, when AC input section 6 which is a main power supply is interruption of service and a rechargeable battery 14 is used as auxiliary power, it is called the time a of interruption of service, and when the power extraction section 10 is used as auxiliary power, it is called the time b of interruption of service.

[0013] In the liquid crystal back light section 4, the information in which alter operation is possible can be known now to an operator by touch panel 2e of current and the touch panel recognition data-processing section 2 by being covered in the state of the usual electric power supply whose AC input section 6 which is a main power supply is not interruption of service with the fixed pattern projected on liquid crystal display 4a by the back light light from back light unit 4b.

[0014] The information inputted by touch panel 2e of the touch panel recognition data-processing section 2 is processed by CPU2a, and while collating and calculating with ROM2b and the information stored in RAM2c and carrying out various processings, it becomes possible to control 2d of communications departments according to said information if needed,

and to connect with external equipment through a dial-up line 8.

[0015] Hereafter, the control action of the communication device of the gestalt 1 of this operation is explained with reference to the flow chart shown by drawing 2 thru/or drawing 4 focusing on actuation of CPU2a of the touch panel recognition data-processing section 2.

[0016] First, in always carrying out monitor detection of the condition of AC input section 6, i.e., a main power supply, at the step (2-1) in the Maine flow chart shown by drawing 2 and being in the usual energization condition that this AC input section 6 is not interruption of service, this Maine flow chart has repeated monitor detection of the condition of a main power supply, without performing anything. And detection of that the interruption-of-service condition was turned on at the step (2-1) detects the data communication condition between communication devices (we communication device) and the other party communication devices concerned at a step (2-2) next. Detection of this communication link condition is performed under supervising the I/O from 2d of communications departments connected to the dial-up line 8.

[0017] In this way, when control is shifted to a processing flow chart during the transmission to B, i.e., drawing 3, when a main power supply is that the electric current is cut off and a we communication device is transmitting data to the other party communication device at a step (2-2), and a we communication device is receiving data from the other party communication device, control is shifted to a processing flow chart during the reception to C, i.e., drawing 4.

[0018] And a main power supply is that the electric current is cut off, when there was nothing in the state of the communication link of data between a we communication device and the other party communication device and it detects, it progresses to a step (2-3), and it is not said B or any of C at a step (2-2), either, and a talk state is detected at this step (2-3). A message here is talking over the telephone by the other party and telephone.

[0019] Another processing is not carried out, while being under message about the termination, repeating detection at a step (2-4) until the message is completed since continuation of the message by it being also with the power which was supplied from the dial-up line (2) and extracted in the power extraction section 10 is possible even if AC input section 6 which is a main power supply is that the electric current is cut off when it was in the other party and a talk state at the step (2-3) and detects. And when it is detected at a step (2-4) that the message was completed, control is returned to the head (A) of the Maine flow chart, and it returns to detection of the condition of the main power supply of a step (2-1).

[0020] On the other hand, when it is not detected at said step (2-3) that it is a talk state, regular communication link time amount is detected at a step (2-5) next. This regular communication link time amount is time amount which transmits data to the other party communication device automatically. When having not resulted in this regular communication link time amount, control is returned to the head (A) of the Maine flow chart. When it results in regular communication link time amount, after making a communication line open at a step (2-6) and transmitting the regular interruption-of-service information on the ability "not to do transmission and reception of regular information since current we are under interruption of service" to the other party at a step (2-7), control is returned to the head (A) of the Maine flow chart.

[0021] Next, although it shifts to a processing flow chart during the transmission to said B, i.e., drawing 3, when data are being transmitted to the other party communication device from a we communication device as a result of detecting a data send state at said step (2-2), the processing after this shift is explained. First, it checks whether the other party communication device which is the transmission place of data has lapsed into a we communication device and coincidence at the interruption-of-service condition, and the other party communication device is in the condition which cannot receive the data from a we communication device at a step (3-1).

[0022] When the reception whose other party communication device is data at this step (3-1) is impossible, control is shifted to communication link cutting processing of a step (3-4), but when

the other party communication device is possible for reception of the data from a we communication device, it shifts to the step (3-2) for distinguishing the classification of data which has transmitted to current and the other party communication device next. As a classification of this data, there are FAX, an electronic mail, and personal computer communications.

[0023] When it detects that the data under current transmission are an electronic mail at a step (3-2) After making transmission of the data under current transmission complete at a step (3-3), while performing communicative cutting processing at a step (3-4) So that the contents of the data which are already transmitting ending when interruption of service is recovered at a step (3-6), after carrying out storing processing of the information on the data which are already transmitting ending to the other party communication device at RAM2c at the step (3-5) can be displayed After carrying out a preliminary treatment, control is shifted to the head (A) of the drawing 2 Maine flow chart.

[0024] On the other hand, when it detects that the data under current transmission are FAX at a step (3-2) After making a step (3-7) complete transmission of current transmitting page data It detects whether the transmitting page is data of the last page at a step (3-8). When it detected that it is the last page, communicative cutting processing was performed at the step (3-4), and when there was nothing and it detected, since it was "interruption of service, transmission of the data of the page after it became impossible at the step (3-9) at the last page. After carrying out transmitting processing of the regular sentences, such as ", at the other party communication device, control is shifted to the step (3-4) of communication link cutting processing.

[0025] When it, further on the other hand, detects that the data under current transmission are personal computer communications at a step (3-2) Although control is shifted to the step (3-4) of communication link cutting processing when it judges whether it is during the communication link which uses the protocol which can resume the personal computer communications at a step (2-10) and the protocol which cannot be resumed is under use Transmitting processing of the information required for a resume at a step (3-11) when the protocol which can be resumed is under use is carried out at the other party communication device. Later, After carrying out storing processing of the information required for a resume also oneself at a step (3-12) at RAM2c, control is shifted to the step (3-4) of communication link cutting processing.

[0026] Next, as a result of returning to the Maine flow chart of drawing 2 and detecting the communication link condition of data at a step (2-2), when the we communication device (it becomes this receiving origin) had received data from the other party communication device and it detects, it shifts to a processing flow chart during reception of drawing 4 . The processing in CPU2a after it is explained based on the flow chart of this drawing 4 . First, since AC input section 6 which is the main power supply of the we communication device which is the receiving origin of data has lapsed into the interruption-of-service condition, it checks whether it is in the condition which cannot receive the data from the other party communication device at a step (4-1).

[0027] At a step (4-1), a we communication device shifts control to cutting processing of a communication link at a step (4-4), when reception of the data from the other party communication device is impossible. However, when a we communication device is possible for reception of the data from the other party communication device, distinction of the classification of the data from the other party communication device is processed at a step (4-2). and when the data which are carrying out current reception are an electronic mail as a result of the distinction After processing the completion of reception of the data under current reception at a step (4-3), while processing communication link cutting at a step (4-4) Processing which stores the information on data [finishing / reception at a step (4-5)] in RAM2c which is memory is performed. Preparation is processed and control is shifted to the

head (A) of the Main flow chart of drawing 2 so that the contents of received data can furthermore be displayed at a step (4-6) at the time of interruption-of-service recovery.

[0028] On the other hand, when it detects that the data under reception are FAX as a result of distinction at a step (4-2), completion processing of reception of current page data is performed at a step (4-7). And although detection processing of whether a current page is data of the last page is carried out at a step (4-8) next, it deals with communication link cutting at a step (4-4) in being the last page, and control is shifted In the last page, when there was nothing, - ***** cutting processing was performed at the step (4-9), it connected with the method of the front and rear again, and since it was "interruption of service, the data of the page after it became receive-not-ready ability. After performing processing which transmits regular sentences, such as ", to the other party communication device at a step (4-13), communication link cutting is processed at a step (4-4), and control is shifted.

[0029] When it, further on the other hand, detects that the data under reception are personal computer communications as a result of distinction at a step (4-2) Although control is shifted to communication link cutting processing at a step (4-4) when decision processing of whether it is [be / it] under communication link is carried out at a step (4-10) using the protocol which can be resumed and the protocol which cannot be resumed is under use Reception of the information required for a resume at a step (4-11) when the protocol which can be resumed is under use is carried out from a receiving agency. Storing processing of the information required for a resume at a step (4-11) is carried out at RAM2c which is memory, and control is shifted to processing of communication link cutting at a step (4-4) by after that.

[0030] There is nothing in corresponding to the change of state of a main power supply simply, and the above control enables it to build the system which can perform various suitable correspondences according to the communication link condition in the time of interruption of service of a main power supply.

[0031] (Gestalt 2 of operation) The communication device with a compound function concerning the gestalt 2 of operation of this invention is explained with reference to drawing 5 and drawing 6 . The circuit block configuration of this communication device is drawing 1 like the gestalt 1 of operation.

[0032] In the communication device of the gestalt 2 of this operation, it can be made to perform various kinds of control with the remaining-in rechargeable battery 14 as auxiliary power used when main power supply fails for power capacity at the time of the interruption of service. With reference to the flow chart of drawing 5 and each drawing 6 , actuation of CPU2a is explained as a core about that. Although the explanation about the configuration of the means is omitted since it is well-known about a means to detect the remaining capacity of a rechargeable battery 14, as for CPU2a, the data of the remaining capacity of a rechargeable battery 14 are given from the detection means. In addition, drawing 5 is a monitor flow chart to a rechargeable battery 14, and drawing 6 is a flow chart about a communication link impossible condition. Construction of the high cure against interruption of service of practicality of the communication device of the gestalt 2 of this operation is still attained by the below-mentioned control action explained with reference to these flow charts.

[0033] With reference to drawing 5 , monitor detection of the condition of a main power supply is always carried out at a step (5-1), and, in the case of an energization condition, the flow chart of drawing 5 repeats monitor detection of the condition of a main power supply, without performing anything. if it detects that the interruption-of-service condition was turned on at the step (5-1) -- a degree -- a step (5-2) -- current -- the remaining capacity of an usable rechargeable battery is detected and then a data communication condition is detected at a step (5-3). When it is under communication link about data at this step (5-3), the capacity information on the data under present communication link comes to hand at a step (5-4). And time amount required by the completion of a communication link from now on is computed at a

step (5-5) based on line speed and the capacity information on the data under communication link which came to hand at said step (5-4).

[0034] Next, the comparison with time amount required by the completion of a communication link which computed the time amount in which continuation of a communication link is possible, and was computed above (5-5) from the information on the remaining capacity of the rechargeable battery detected at said step (5-2) is performed, and it judges whether the completion of a communication link of current data is possible at a step (5-6).

[0035] When the completion of a communication link is possible, after completing data communication processing to the last at a step (5-7), communicative cutting processing is performed. While shifting control to the head (D) of the flow chart of drawing 5 after that, when the completion of a communication link is impossible, control is shifted to the head (E) of the communication link impossible condition flow chart of drawing 6.

[0036] Next, when it is [current] under communication link by detection of the communication link condition of said step (5-3) and it is judged that there is nothing, the capacity information on the data which should carry out a regular communication link next time comes to hand at a step (5-8). Based on the capacity information on the data which should carry out a regular communication link the next time which came to hand at line speed and said step (5-8), time amount required for a regular communication link next time is computed at a step (5-9). Next, the comparison with the time amount required for a regular communication link next time which computed the time amount in which continuation of a communication link is possible from the information on the remaining capacity of the rechargeable battery detected at said step (5-2), and was computed at said step (5-9) is performed, and it judges whether the completion of a communication link of a regular communication link is possible next time at a step (5-10).

[0037] When the completion of a communication link is impossible, control is shifted to the head (E) of the communication link impossible condition flow chart of drawing 6. When the completion of a communication link is possible, regular communication link time amount is judged at a step (5-11), if it is regular communication link time amount, it will connect with a regular communication link place, regular data communication will be performed at a step (5-12), and control will be shifted to the head (D) of this flow chart after that. In regular communication link time amount, when there is nothing, control is shifted to the head (D) of this flow chart, without performing anything.

[0038] Next, the control in the case of a communication link impossible condition is explained with reference to the flow chart of drawing 6. It checks whether the other party communication device which is a communication link place is in the condition in which data communication is impossible by lapsing into coincidence at an interruption-of-service condition. When a communication link place cannot communicate at a step (6-1), control is shifted to a step (6-6), condition detection of a main power supply is performed, and recovery of a waiting main power supply repeats this processing for recovery of a power-source condition. Where a main power supply is recovered, control is shifted to (D) of drawing 5. When a communication link place can communicate at a step (6-1), the information on the capacity of interruption-of-service information data comes to hand at a step (6-2), and time amount required for interruption-of-service information data sending is computed for line speed and the capacity information on the interruption-of-service information data which came to hand at said step (6-2) at a step (6-3) to origin. Next, the comparison with time amount required for the interruption-of-service information data sending which computed the time amount in which continuation of a communication link is possible from the information on the remaining capacity of the rechargeable battery detected at said step (5-2), and was computed at said step (6-3) is performed, and it judges whether the completion of a communication link of interruption-of-service information data is possible (6-4). When the completion of a communication link is impossible, control is shifted to a step (6-6). When the completion of a communication link is

possible, it connects with a communication link place and interruption-of-service information data communication is performed at a step (6-5), and control is shifted to a step (6-6) after that.

[0039] It becomes possible by there being nothing in corresponding to the change of state of a main power supply simply, and grasping the communication link condition in the condition, and detecting the residue of a current rechargeable battery by the above control, to build the system which can perform various correspondences.

[0040] (Gestalt 3 of operation) The communication device with a compound function applied to the gestalt 3 of operation of this invention with reference to drawing 7 thru/or drawing 10 is explained. The perspective view and the side elevation, drawing 8, and drawing 10 of the important section in case drawing 7 and drawing 9 have the main power supply of the communication device of the gestalt 3 of this operation in an energization condition, respectively are the perspective view and side elevation of the important section in case the main power supply of the communication device of the gestalt 3 of this operation is in an interruption-of-service condition.

[0041] First, with reference to drawing 7 and drawing 8, 16 is a transparence touch panel (touch panel 2e of drawing 1), and 18 is an input auxiliary seat. 20, 22, and 24 -- for a roller and 26, as for a tension belt and 30, a volume spring and 28 are [each / a case and 32] electromagnetic-clutch units. AC input section 6 which is a main power supply drives a touch panel 16 with the power from auxiliary power, such as a rechargeable battery 14, also in an interruption-of-service condition, and alter operation is possible. Firm-bridging maintenance of the input auxiliary seat 18 is carried out among rollers 20 and 24 as an auxiliary member. A 1 one-half side is non-printed partial 18a, while the other one half side is printing partial 18b, the non-printed partial 18a edge by the side of 1 one half is held at a roller 20, and, as for the input auxiliary seat 18, the printing partial 18b edge by the side of other one half is held at the roller 24. It is the location where printing partial 18b becomes perpendicular to non-printed partial 18a with rollers 22 and 24 in while the operator who, as for the input auxiliary seat 18, non-printed partial 18a is located [again / condition / of drawing 7 / above a touch panel 16] in parallel with this touch panel 16 with rollers 20 and 22, looks at a touch panel 16, and operates it is faced, and an operator's printing partial 18b cannot be seen. While being fixed to the case 30, the other end side is being twisted and fixed to the roller 20 by the end side of the tension belt 28. And the tension belt 28 is energized in the direction of arrow-head A from the volume spring 28, and the turning effort of the direction of arrow-head B is given to the roller 20 to which the other end side of the tension belt 28 is being fixed by this. Therefore, the migration force of the direction of arrow-head C is applied to the input auxiliary seat 18 by which the non-printed partial 18b edge is being fixed to the roller 20. Therefore, the input auxiliary seat 18 will be laid among rollers 20 and 24. The figure of "0" - for alter operation "9" and other notations are arranged in all directions by printing partial 18b of this input auxiliary seat 18, and are printed.

[0042] On the other hand, when it is in an energization condition from a main power supply, the electromagnetic-clutch unit 32 resists the migration force of the direction of drawing Nakaya mark C at the input auxiliary seat 18 because the drive power source which used the power from this main power supply energizes, and holds the input auxiliary seat 18 in the condition of drawing 7. And when a main power supply is that the electric current is cut off, it becomes impossible for the drive power source of that to energize to the electromagnetic-clutch unit 32, and the electromagnetic-clutch unit 32 cannot prevent migration of the input auxiliary seat 18, therefore the input auxiliary seat 18 is moved as drawing 8 shows by rotation of the direction of arrow-head B of a roller 20, and the printing partial 18b is made to install automatically on a touch panel 16. When a touch panel 16 has a main power supply in an energization condition, the input section for alter operation is displayed by liquid crystal display 4a and back light unit

4b, but the display will be lost if a main power supply is that the electric current is cut off. In this case, since a power source is supplied to a touch panel 16 from auxiliary power, actuation has become possible. In this way, since printing partial 18b of the input auxiliary seat 18 is located on a touch panel 16 as the input section when a main power supply is that the electric current is cut off, the alter operation of an operator becomes possible to a touch panel 16 by the input section in which the input auxiliary seat 18 was printed by interruption of service of a main power supply even if there was no display of the input section to the touch panel 16 top from liquid crystal display 4a. In addition, although printing partial 18b of the input auxiliary seat 18 becomes unnecessary after a main power supply returns from interruption of service, it is possible to return the input auxiliary seat 18 to the condition of drawing 7 simple by rotating knob 24a installed in the roller 24 in this case in the direction of arrow-head D.

[0043] Here, the configuration of the electromagnetic-clutch unit 32 is explained with reference to drawing 9 and drawing 10. Drawing 9 shows the condition of the electromagnetic-clutch unit 32 in the energization condition from a main power supply, 33 is a case, and while the electromagnet unit 34 is arranged to the interior of this case 33, the arm 36 is attached in the center of rotation 38 pivotable. While end side 36a of an arm 36 counters the adsorption side side of the electromagnet unit 34, other end side 36b of this arm 36 is projected outside from a case 33, and engaging and releasing of it into the slot 38 currently formed in the roller 24 is attained.

[0044] According to the electromagnetic-clutch unit 32 which has this configuration, since the electromagnet unit 34 is first adsorbed in end side 36a of an arm 36 when a main power supply is in an energization condition, other end side 36b of an arm 36 rotates in the direction of arrow-head E, and engages with the slot 38 of a roller 24, and, as for a roller 24, rotation of arrow-head D1 direction is prevented by this. Since rotation inhibition of the arrow-head D1 direction of this roller 24 is inhibition of migration in the direction of arrow-head C of the input auxiliary seat 18, non-printed partial 18a of the input auxiliary seat 18 will counter a touch panel 16. Moreover, if a main power supply is that the electric current is cut off, since the electromagnet unit 34 cannot adsorb end side 36a of an arm 36 The force which engages with other end side of arm 36 36b in the slot 38 of a roller 24, and prevents rotation of the arrow-head D1 direction of a roller 24 is lost. By this The migration force of the input auxiliary seat 18 which is going to move by rotation of the direction of arrow-head B from a roller 20 cannot be overcome, consequently the input auxiliary seat 18 moves in the direction of arrow-head C, and a roller 24 is made to be located in that printing partial 18b on a touch panel 16.

[0045] Since it is made to install the printing side for the alter operation of an input auxiliary seat on a touch panel automatically when the input auxiliary seat for the coordinate input of a ** is located near the touch panel by the above configuration at the time of interruption of service of a main power supply according to the gestalt 3 of this operation and the interruption of service is detected, it does [an operator / in interruption of service] alter operation of a touch panel using information required for the alter operation by which the printing publication is carried out and is convenient for the printing side.

[0046]

[Effect of the Invention] According to this invention, the following effectiveness can be acquired as mentioned above.

[0047] The 1st processing actuation which detects the condition of a main power supply according to invention of claim 1, The 2nd processing actuation which detects whether data will communicate at the time of interruption of service if it detects that the result of said 1st processing actuation is in the interruption-of-service condition of a main power supply, The 3rd processing actuation to which the result of said 2nd processing actuation detects whether the communication link whose transmission place or receiving origin is data while data are communicating is possible, The 4th processing actuation which distinguishes the classification

of said data according to each function when the communication link whose result of said 3rd processing actuation is data is possible, Since 5th processing actuation which performs necessary actuation according to the result of said 3rd processing actuation can be carried out, by performing various correspondences by the communication link condition and data classification at the time of interruption of service In the case of data communication, it becomes continuable [a communication link] after a power fail recovery, without making data [finishing / transmission / already] useless, and operability and economical efficiency are improved sharply. Moreover, in a regular communication link, it becomes with possible ability to be able to cancel the futility of the regular transmission under interruption of service [place / communication link], and to resume the regular communication link after a power fail recovery smoothly by notifying that it is in the condition in which a regular communication link place HE communication link is impossible, and operability and economical efficiency are improved sharply.

[0048] Since it is the communication device according to claim 1 characterized by implementation of necessary processing actuation being possible from the time amount which the communication link of said data in the time of day relevant to interruption of service of a main power supply takes further, and the capacity of said auxiliary power according to invention of claim 2 In addition to the operation effectiveness of claim 1, further, it becomes possible to prevent beforehand communication link disabling in the middle of the data communication at the time of the interruption of service using this auxiliary power by the lack of capacity of auxiliary power, or the communication link of a regular communication link, and operability and economical efficiency are improved sharply.

[0049] According to invention of claim 3, the contents of processing actuation necessary [said] carry out data processing of whether the completion of a communication link of said commo data is possible from said time amount and capacity. Since it is the communication device according to claim 2 characterized by being what carries out communication link actuation as the communication link of said data is made to complete when the result of an operation that the completion of a communication link is possible is obtained Even if it communicates data by auxiliary power by interruption of service of a main power supply further in addition to the operation effectiveness of claims 1 and 2, the communication link of data can be made to complete without malfunction, and the high communication device of practicality is obtained.

[0050] claim 1 which is characterized by said auxiliary power being a rechargeable battery according to invention of claim 4 thru/or 3 -- since it is a communication device given in either, the high communication device of practicality cheap in cost is obtained using the rechargeable battery used widely as auxiliary power.

[0051] according to invention of claim 5, when a main power supply is in an energization condition, an entry-of-data control unit displays -- having -- a touch -- with the touch type input member made operational When it is in the interruption-of-service condition of said main power supply and an input control unit is not displayed on said touch type input member claim 1 characterized by providing the touch type input auxiliary member which is alike, is automatically installed on said touch type input member, and serves as instead of [of said input control unit] thru/or 4, since it is a communication device given in either It becomes possible to attain immediate use and to measure a user's convenience to loss prevention and coincidence of this auxiliary member, by automatic installation of a touch type input auxiliary member required at the time of interruption of service.

[Translation done.]

TECHNICAL FIELD

[Field of the Invention] This invention relates to the communication device with a compound function equipped with the necessary control function at the time of interruption of service of a power source.

[Translation done.]

PRIOR ART

[Description of the Prior Art] When transmitting processing of FAX is abortive by un-completing, after a user enables retransmission of message of FAX or during - scheduled time transmits a message from the display or the record in the condition of not completing, on the occasion of interruption of service, there is equipment which changes to interruption-of-service mode automatically, as described by the publication-number No. 54161 [six to] official report as a conventional technique of the communication device equipped with the necessary control function at the time of interruption of service of a power source. There is equipment which gave directions of dispatch to the direct pulse / tone dialer with the output of a touch output detector on the occasion of interruption of service as described by the Provisional-Publication-No. No. 262547 [62 to] official report as other conventional techniques of still such a communication device.

[Translation done.]

EFFECT OF THE INVENTION

[Effect of the Invention] According to this invention, the following effectiveness can be acquired as mentioned above.

[0047] The 1st processing actuation which detects the condition of a main power supply according to invention of claim 1, The 2nd processing actuation which detects whether data will communicate at the time of interruption of service if it detects that the result of said 1st processing actuation is in the interruption-of-service condition of a main power supply, The 3rd processing actuation to which the result of said 2nd processing actuation detects whether the communication link whose transmission place or receiving origin is data while data are communicating is possible, The 4th processing actuation which distinguishes the classification of said data according to each function when the communication link whose result of said 3rd processing actuation is data is possible, Since 5th processing actuation which performs necessary actuation according to the result of said 3rd processing actuation can be carried out, by performing various correspondences by the communication link condition and data classification at the time of interruption of service In the case of data communication, it becomes continuable [a communication link] after a power fail recovery, without making data [finishing / transmission / already] useless, and operability and economical efficiency are improved sharply. Moreover, in a regular communication link, it becomes with possible ability to be able to cancel the futility of the regular transmission under interruption of service [place / communication link], and to resume the regular communication link after a power fail recovery smoothly by notifying that it is in the condition in which a regular communication link place HE communication link is impossible, and operability and economical efficiency are improved sharply.

[0048] Since it is the communication device according to claim 1 characterized by implementation of necessary processing actuation being possible from the time amount which the communication link of said data in the time of day relevant to interruption of service of a main power supply takes further, and the capacity of said auxiliary power according to invention of claim 2 In addition to the operation effectiveness of claim 1, further, it becomes possible to prevent beforehand communication link disabling in the middle of the data communication at the time of the interruption of service using this auxiliary power by the lack of capacity of auxiliary power, or the communication link of a regular communication link, and operability and economical efficiency are improved sharply.

[0049] According to invention of claim 3, the contents of processing actuation necessary [said] carry out data processing of whether the completion of a communication link of said commo data is possible from said time amount and capacity. Since it is the communication device according to claim 2 characterized by being what carries out communication link actuation as the communication link of said data is made to complete when the result of an operation that the completion of a communication link is possible is obtained Even if it communicates data by auxiliary power by interruption of service of a main power supply further in addition to the operation effectiveness of claims 1 and 2, the communication link of data can be made to complete without malfunction, and the high communication device of practicality is obtained.

[0050] claim 1 which is characterized by said auxiliary power being a rechargeable battery according to invention of claim 4 thru/or 3 -- since it is a communication device given in either, the high communication device of practicality cheap in cost is obtained using the rechargeable battery used widely as auxiliary power.

[0051] according to invention of claim 5, when a main power supply is in an energization condition, an entry-of-data control unit displays -- having -- a touch -- with the touch type input member made operational When it is in the interruption-of-service condition of said main power

supply and an input control unit is not displayed on said touch type input member claim 1 characterized by providing the touch type input auxiliary member which is alike, is automatically installed on said touch type input member, and serves as instead of [of said input control unit] thru/or 4, since it is a communication device given in either It becomes possible to attain immediate use and to measure a user's convenience to loss prevention and coincidence of this auxiliary member, by automatic installation of a touch type input auxiliary member required at the time of interruption of service.

[Translation done.]

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] In recent years, although many communication devices with a compound function with which simultaneous-possession-ization of functions, such as FAX, an electronic mail, and personal computer communications, progressed have been commercialized, since a communication device receives the equipment which has only the function of ** - with the above-mentioned conventional technique, it is difficult a communication device to fully demonstrate the function to such a communication device with a compound function according to the interruption-of-service condition of a main power supply, although activation of fixed processing is possible.

[0004] Moreover, it was what continues the present processing, or does not hold data, or is only performing ** --correspondence of notifying having gone into the interruption-of-service condition when a main power supply fails for power with the above-mentioned conventional technique, cannot perform additional correspondence beyond it, but is inferior to the usability in a communication device with a compound function.

[Translation done.]

MEANS

[Means for Solving the Problem] The 2nd processing actuation which will detect [of data] whether it is under communication link at the time of interruption of service if this invention detects that the result of the 1st processing actuation which detects the condition of a main power supply, and said 1st processing actuation is in the interruption-of-service condition of a main power supply, The 3rd processing actuation to which the result of said 2nd processing actuation detects whether the communication link whose transmission place or receiving origin is data while data are communicating is possible, The 4th processing actuation which distinguishes the classification of said data according to each function when the communication link whose result of said 3rd processing actuation is data is possible, The above-mentioned technical problem is solved by having considered as the communication device with a compound function characterized by the ability to carry out 5th processing actuation which performs necessary actuation according to the result of said 3rd processing actuation.

[0006]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained in detail with reference to a drawing. Although for example, a FAX function, an electronic mail function, personal computer communication facility, etc. occur as a compound function in the communication device with a compound function of this invention, as this function, it is not limited to this.

[0007] (Gestalt 1 of operation) When the communication device with a compound function applied to the gestalt 1 of operation of this invention with reference to drawing 1 is explained, 2 is the touch panel recognition data-processing section. This touch panel recognition data-processing section 2 consists of CPU2a, ROM2b, RAM2c, 2d of the communications departments, and transparence touch panel 2e. 4 is the liquid crystal back light section. This liquid crystal back light section 4 consists of liquid crystal display 4a and back light unit 4b. The body of equipment of the communication device concerned consists of this touch panel recognition data-processing section 2 and the liquid crystal back light section 4. For AC input section and 8, as for the power extraction section and 12, a dial-up line and 10 are [6 / a battery charger and 14] rechargeable batteries.

[0008] The alternating current power from AC input section 6 is supplied to the touch panel recognition data-processing section 2 and the liquid crystal back light section 4 as power required for these drives as power of a main power supply, respectively.

[0009] Moreover, the alternating current power from AC input section 6 is accumulated in the rechargeable battery 14 through the battery charger 12, and the power accumulated in this rechargeable battery 14 is supplied to the touch panel recognition data-processing section 2 and the liquid crystal back light section 4 as power of auxiliary power, when AC input section 6 which is a main power supply fails for power.

[0010] On the other hand, when AC input section 6 which is a main power supply fails for power, the power extraction section 10 supplies this extracted power to the touch panel recognition data-processing section 2 and the liquid crystal back light section 4 which are a body of equipment as power of auxiliary power, while extracting power from a dial-up line 8.

[0011] the gestalt 1 of this operation here -- auxiliary power -- a rechargeable battery 14 side and the power extraction section 10 side -- respectively -- since -- it is constituted possible [supply] by the body of equipment.

[0012] In this case, auxiliary power is supplied from any by the side of a rechargeable battery 14 and the power extraction section 10, or one side. In this case, when auxiliary power is a rechargeable battery 14, comparatively big power can supply the body of equipment. When following, for example, not using the liquid crystal back light section 4 for the body of

equipment, power may be made to be supplied to the body of equipment only from the power extraction section 10, and when using the liquid crystal back light section 4, power may be made to be supplied from a rechargeable battery 14. The drive of the liquid crystal back light section 4 takes big power because back light unit 4b is contained in it. In addition, when AC input section 6 which is a main power supply is interruption of service and a rechargeable battery 14 is used as auxiliary power, it is called the time a of interruption of service, and when the power extraction section 10 is used as auxiliary power, it is called the time b of interruption of service.

[0013] In the liquid crystal back light section 4, the information in which alter operation is possible can be known now to an operator by touch panel 2e of current and the touch panel recognition data-processing section 2 by being covered in the state of the usual electric power supply whose AC input section 6 which is a main power supply is not interruption of service with the fixed pattern projected on liquid crystal display 4a by the back light light from back light unit 4b.

[0014] The information inputted by touch panel 2e of the touch panel recognition data-processing section 2 is processed by CPU2a, and while collating and calculating with ROM2b and the information stored in RAM2c and carrying out various processings, it becomes possible to control 2d of communications departments according to said information if needed, and to connect with external equipment through a dial-up line 8.

[0015] Hereafter, the control action of the communication device of the gestalt 1 of this operation is explained with reference to the flow chart shown by drawing 2 thru/or drawing 4 focusing on actuation of CPU2a of the touch panel recognition data-processing section 2.

[0016] First, in always carrying out monitor detection of the condition of AC input section 6, i.e., a main power supply, at the step (2-1) in the Maine flow chart shown by drawing 2 and being in the usual energization condition that this AC input section 6 is not interruption of service, this Maine flow chart has repeated monitor detection of the condition of a main power supply, without performing anything. And detection of that the interruption-of-service condition was turned on at the step (2-1) detects the data communication condition between communication devices (we communication device) and the other party communication devices concerned at a step (2-2) next. Detection of this communication link condition is performed under supervising the I/O from 2d of communications departments connected to the dial-up line 8.

[0017] In this way, when control is shifted to a processing flow chart during the transmission to B, i.e., drawing 3, when a main power supply is that the electric current is cut off and a we communication device is transmitting data to the other party communication device at a step (2-2), and a we communication device is receiving data from the other party communication device, control is shifted to a processing flow chart during the reception to C, i.e., drawing 4.

[0018] And a main power supply is that the electric current is cut off, when there was nothing in the state of the communication link of data between a we communication device and the other party communication device and it detects, it progresses to a step (2-3), and it is not said B or any of C at a step (2-2), either, and a talk state is detected at this step (2-3). A message here is talking over the telephone by the other party and telephone.

[0019] Another processing is not carried out, while being under message about the termination, repeating detection at a step (2-4) until the message is completed since continuation of the message by it being also with the power which was supplied from the dial-up line (2) and extracted in the power extraction section 10 is possible even if AC input section 6 which is a main power supply is that the electric current is cut off when it was in the other party and a talk state at the step (2-3) and detects. And when it is detected at a step (2-4) that the message was completed, control is returned to the head (A) of the Maine flow chart, and it returns to detection of the condition of the main power supply of a step (2-1).

[0020] On the other hand, when it is not detected at said step (2-3) that it is a talk state, regular

communication link time amount is detected at a step (2-5) next. This regular communication link time amount is time amount which transmits data to the other party communication device automatically. When having not resulted in this regular communication link time amount, control is returned to the head (A) of the Maine flow chart. When it results in regular communication link time amount, after making a communication line open at a step (2-6) and transmitting the regular interruption-of-service information on the ability "not to do transmission and reception of regular information since current we are under interruption of service" to the other party at a step (2-7), control is returned to the head (A) of the Maine flow chart.

[0021] Next, although it shifts to a processing flow chart during the transmission to said B, i.e., drawing 3, when data are being transmitted to the other party communication device from a we communication device as a result of detecting a data send state at said step (2-2), the processing after this shift is explained. First, it checks whether the other party communication device which is the transmission place of data has lapsed into a we communication device and coincidence at the interruption-of-service condition, and the other party communication device is in the condition which cannot receive the data from a we communication device at a step (3-1).

[0022] When the reception whose other party communication device is data at this step (3-1) is impossible, control is shifted to communication link cutting processing of a step (3-4), but when the other party communication device is possible for reception of the data from a we communication device, it shifts to the step (3-2) for distinguishing the classification of data which has transmitted to current and the other party communication device next. As a classification of this data, there are FAX, an electronic mail, and personal computer communications.

[0023] When it detects that the data under current transmission are an electronic mail at a step (3-2) After making transmission of the data under current transmission complete at a step (3-3), while performing communicative cutting processing at a step (3-4) So that the contents of the data which are already transmitting ending when interruption of service is recovered at a step (3-6), after carrying out storing processing of the information on the data which are already transmitting ending to the other party communication device at RAM2c at the step (3-5) can be displayed After carrying out a preliminary treatment, control is shifted to the head (A) of the drawing 2 Maine flow chart.

[0024] On the other hand, when it detects that the data under current transmission are FAX at a step (3-2) After making a step (3-7) complete transmission of current transmitting page data It detects whether the transmitting page is data of the last page at a step (3-8). When it detected that it is the last page, communicative cutting processing was performed at the step (3-4), and when there was nothing and it detected, since it was "interruption of service, transmission of the data of the page after it became impossible at the step (3-9) at the last page. After carrying out transmitting processing of the regular sentences, such as ", at the other party communication device, control is shifted to the step (3-4) of communication link cutting processing.

[0025] When it, further on the other hand, detects that the data under current transmission are personal computer communications at a step (3-2) Although control is shifted to the step (3-4) of communication link cutting processing when it judges whether it is during the communication link which uses the protocol which can resume the personal computer communications at a step (2-10) and the protocol which cannot be resumed is under use Transmitting processing of the information required for a resume at a step (3-11) when the protocol which can be resumed is under use is carried out at the other party communication device. Later, After carrying out storing processing of the information required for a resume also oneself at a step (3-12) at RAM2c, control is shifted to the step (3-4) of communication link cutting processing.

[0026] Next, as a result of returning to the Maine flow chart of drawing 2 and detecting the

communication link condition of data at a step (2-2), when the we communication device (it becomes this receiving origin) had received data from the other party communication device and it detects, it shifts to a processing flow chart during reception of drawing 4 . The processing in CPU2a after it is explained based on the flow chart of this drawing 4 . First, since AC input section 6 which is the main power supply of the we communication device which is the receiving origin of data has lapsed into the interruption-of-service condition, it checks whether it is in the condition which cannot receive the data from the other party communication device at a step (4-1).

[0027] At a step (4-1), a we communication device shifts control to cutting processing of a communication link at a step (4-4), when reception of the data from the other party communication device is impossible. However, when a we communication device is possible for reception of the data from the other party communication device, distinction of the classification of the data from the other party communication device is processed at a step (4-2). and when the data which are carrying out current reception are an electronic mail as a result of the distinction After processing the completion of reception of the data under current reception at a step (4-3), while processing communication link cutting at a step (4-4) Processing which stores the information on data [finishing / reception at a step (4-5)] in RAM2c which is memory is performed. Preparation is processed and control is shifted to the head (A) of the Maine flow chart of drawing 2 so that the contents of received data can furthermore be displayed at a step (4-6) at the time of interruption-of-service recovery.

[0028] On the other hand, when it detects that the data under reception are FAX as a result of distinction at a step (4-2), completion processing of reception of current page data is performed at a step (4-7). And although detection processing of whether a current page is data of the last page is carried out at a step (4-8) next, it deals with communication link cutting at a step (4-4) in being the last page, and control is shifted In the last page, when there was nothing, - ***** cutting processing was performed at the step (4-9), it connected with the method of the front and rear again, and since it was "interruption of service, the data of the page after it became receive-not-ready ability. After performing processing which transmits regular sentences, such as ", to the other party communication device at a step (4-13), communication link cutting is processed at a step (4-4), and control is shifted.

[0029] When it, further on the other hand, detects that the data under reception are personal computer communications as a result of distinction at a step (4-2) Although control is shifted to communication link cutting processing at a step (4-4) when decision processing of whether it is [be / it] under communication link is carried out at a step (4-10) using the protocol which can be resumed and the protocol which cannot be resumed is under use Reception of the information required for a resume at a step (4-11) when the protocol which can be resumed is under use is carried out from a receiving agency. Storing processing of the information required for a resume at a step (4-11) is carried out at RAM2c which is memory, and control is shifted to processing of communication link cutting at a step (4-4) by after that.

[0030] There is nothing in corresponding to the change of state of a main power supply simply, and the above control enables it to build the system which can perform various suitable correspondences according to the communication link condition in the time of interruption of service of a main power supply.

[0031] (Gestalt 2 of operation) The communication device with a compound function concerning the gestalt 2 of operation of this invention is explained with reference to drawing 5 and drawing 6 . The circuit block configuration of this communication device is drawing 1 like the gestalt 1 of operation.

[0032] In the communication device of the gestalt 2 of this operation, it can be made to perform various kinds of control with the remaining-in rechargeable battery 14 as auxiliary power used when main power supply fails for power capacity at the time of the interruption of service. With

reference to the flow chart of drawing 5 and each drawing 6 , actuation of CPU2a is explained as a core about that. Although the explanation about the configuration of the means is omitted since it is well-known about a means to detect the remaining capacity of a rechargeable battery 14, as for CPU2a, the data of the remaining capacity of a rechargeable battery 14 are given from the detection means. In addition, drawing 5 is a monitor flow chart to a rechargeable battery 14, and drawing 6 is a flow chart about a communication link impossible condition. Construction of the high cure against interruption of service of practicality of the communication device of the gestalt 2 of this operation is still attained by the below-mentioned control action explained with reference to these flow charts.

[0033] With reference to drawing 5 , monitor detection of the condition of a main power supply is always carried out at a step (5-1), and, in the case of an energization condition, the flow chart of drawing 5 repeats monitor detection of the condition of a main power supply, without performing anything. if it detects that the interruption-of-service condition was turned on at the step (5-1) -- a degree -- a step (5-2) -- current -- the remaining capacity of an usable rechargeable battery is detected and then a data communication condition is detected at a step (5-3). When it is under communication link about data at this step (5-3), the capacity information on the data under present communication link comes to hand at a step (5-4). And time amount required by the completion of a communication link from now on is computed at a step (5-5) based on line speed and the capacity information on the data under communication link which came to hand at said step (5-4).

[0034] Next, the comparison with time amount required by the completion of a communication link which computed the time amount in which continuation of a communication link is possible, and was computed above (5-5) from the information on the remaining capacity of the rechargeable battery detected at said step (5-2) is performed, and it judges whether the completion of a communication link of current data is possible at a step (5-6).

[0035] When the completion of a communication link is possible, after completing data communication processing to the last at a step (5-7), communicative cutting processing is performed. While shifting control to the head (D) of the flow chart of drawing 5 after that, when the completion of a communication link is impossible, control is shifted to the head (E) of the communication link impossible condition flow chart of drawing 6 .

[0036] Next, when it is [current] under communication link by detection of the communication link condition of said step (5-3) and it is judged that there is nothing, the capacity information on the data which should carry out a regular communication link next time comes to hand at a step (5-8). Based on the capacity information on the data which should carry out a regular communication link the next time which came to hand at line speed and said step (5-8), time amount required for a regular communication link next time is computed at a step (5-9). Next, the comparison with the time amount required for a regular communication link next time which computed the time amount in which continuation of a communication link is possible from the information on the remaining capacity of the rechargeable battery detected at said step (5-2), and was computed at said step (5-9) is performed, and it judges whether the completion of a communication link of a regular communication link is possible next time at a step (5-10).

[0037] When the completion of a communication link is impossible, control is shifted to the head (E) of the communication link impossible condition flow chart of drawing 6 . When the completion of a communication link is possible, regular communication link time amount is judged at a step (5-11), if it is regular communication link time amount, it will connect with a regular communication link place, regular data communication will be performed at a step (5-12), and control will be shifted to the head (D) of this flow chart after that. In regular communication link time amount, when there is nothing, control is shifted to the head (D) of this flow chart, without performing anything.

[0038] Next, the control in the case of a communication link impossible condition is explained

with reference to the flow chart of drawing 6 . It checks whether the other party communication device which is a communication link place is in the condition in which data communication is impossible by lapsing into coincidence at an interruption-of-service condition. When a communication link place cannot communicate at a step (6-1), control is shifted to a step (6-6), condition detection of a main power supply is performed, and recovery of a waiting main power supply repeats this processing for recovery of a power-source condition. Where a main power supply is recovered, control is shifted to (D) of drawing 5 . When a communication link place can communicate at a step (6-1), the information on the capacity of interruption-of-service information data comes to hand at a step (6-2), and time amount required for interruption-of-service information data sending is computed for line speed and the capacity information on the interruption-of-service information data which came to hand at said step (6-2) at a step (6-3) to origin. Next, the comparison with time amount required for the interruption-of-service information data sending which computed the time amount in which continuation of a communication link is possible from the information on the remaining capacity of the rechargeable battery detected at said step (5-2), and was computed at said step (6-3) is performed, and it judges whether the completion of a communication link of interruption-of-service information data is possible (6-4). When the completion of a communication link is impossible, control is shifted to a step (6-6). When the completion of a communication link is possible, it connects with a communication link place and interruption-of-service information data communication is performed at a step (6-5), and control is shifted to a step (6-6) after that.

[0039] It becomes possible by there being nothing in corresponding to the change of state of a main power supply simply, and grasping the communication link condition in the condition, and detecting the residue of a current rechargeable battery by the above control, to build the system which can perform various correspondences.

[0040] (Gestalt 3 of operation) The communication device with a compound function applied to the gestalt 3 of operation of this invention with reference to drawing 7 thru/or drawing 10 is explained. The perspective view and the side elevation, drawing 8 , and drawing 10 of the important section in case drawing 7 and drawing 9 have the main power supply of the communication device of the gestalt 3 of this operation in an energization condition, respectively are the perspective view and side elevation of the important section in case the main power supply of the communication device of the gestalt 3 of this operation is in an interruption-of-service condition.

[0041] First, with reference to drawing 7 and drawing 8 , 16 is a transparence touch panel (touch panel 2e of drawing 1), and 18 is an input auxiliary seat. 20, 22, and 24 -- for a roller and 26, as for a tension belt and 30, a volume spring and 28 are [each / a case and 32] electromagnetic-clutch units. AC input section 6 which is a main power supply drives a touch panel 16 with the power from auxiliary power, such as a rechargeable battery 14, also in an interruption-of-service condition, and alter operation is possible. Firm-bridging maintenance of the input auxiliary seat 18 is carried out among rollers 20 and 24 as an auxiliary member. A 1 one-half side is non-printed partial 18a, while the other one half side is printing partial 18b, the non-printed partial 18a edge by the side of 1 one half is held at a roller 20, and, as for the input auxiliary seat 18, the printing partial 18b edge by the side of other one half is held at the roller 24. It is the location where printing partial 18b becomes perpendicular to non-printed partial 18a with rollers 22 and 24 in while the operator who, as for the input auxiliary seat 18, non-printed partial 18a is located [again / condition / of drawing 7 / above a touch panel 16] in parallel with this touch panel 16 with rollers 20 and 22, looks at a touch panel 16, and operates it is faced, and an operator's printing partial 18b cannot be seen. While being fixed to the case 30, the other end side is being twisted and fixed to the roller 20 by the end side of the tension belt 28. And the tension belt 28 is energized in the direction of arrow-head A from the volume

spring 28, and the turning effort of the direction of arrow-head B is given to the roller 20 to which the other end side of the tension belt 28 is being fixed by this. Therefore, the migration force of the direction of arrow-head C is applied to the input auxiliary seat 18 by which the non-printed partial 18b edge is being fixed to the roller 20. Therefore, the input auxiliary seat 18 will be laid among rollers 20 and 24. The figure of "0" - for alter operation "9" and other notations are arranged in all directions by printing partial 18b of this input auxiliary seat 18, and are printed.

[0042] On the other hand, when it is in an energization condition from a main power supply, the electromagnetic-clutch unit 32 resists the migration force of the direction of drawing Nakaya mark C at the input auxiliary seat 18 because the drive power source which used the power from this main power supply energizes, and holds the input auxiliary seat 18 in the condition of drawing 7. And when a main power supply is that the electric current is cut off, it becomes impossible for the drive power source of that to energize to the electromagnetic-clutch unit 32, and the electromagnetic-clutch unit 32 cannot prevent migration of the input auxiliary seat 18, therefore the input auxiliary seat 18 is moved as drawing 8 shows by rotation of the direction of arrow-head B of a roller 20, and the printing partial 18b is made to install automatically on a touch panel 16. When a touch panel 16 has a main power supply in an energization condition, the input section for alter operation is displayed by liquid crystal display 4a and back light unit 4b, but the display will be lost if a main power supply is that the electric current is cut off. In this case, since a power source is supplied to a touch panel 16 from auxiliary power, actuation has become possible. In this way, since printing partial 18b of the input auxiliary seat 18 is located on a touch panel 16 as the input section when a main power supply is that the electric current is cut off, the alter operation of an operator becomes possible to a touch panel 16 by the input section in which the input auxiliary seat 18 was printed by interruption of service of a main power supply even if there was no display of the input section to the touch panel 16 top from liquid crystal display 4a. In addition, although printing partial 18b of the input auxiliary seat 18 becomes unnecessary after a main power supply returns from interruption of service, it is possible to return the input auxiliary seat 18 to the condition of drawing 7 simple by rotating knob 24a installed in the roller 24 in this case in the direction of arrow-head D.

[0043] Here, the configuration of the electromagnetic-clutch unit 32 is explained with reference to drawing 9 and drawing 10. Drawing 9 shows the condition of the electromagnetic-clutch unit 32 in the energization condition from a main power supply, 33 is a case, and while the electromagnet unit 34 is arranged to the interior of this case 33, the arm 36 is attached in the center of rotation 38 pivotable. While end side 36a of an arm 36 counters the adsorption side side of the electromagnet unit 34, other end side 36b of this arm 36 is projected outside from a case 33, and engaging and releasing of it into the slot 38 currently formed in the roller 24 is attained.

[0044] According to the electromagnetic-clutch unit 32 which has this configuration, since the electromagnet unit 34 is first adsorbed in end side 36a of an arm 36 when a main power supply is in an energization condition, other end side 36b of an arm 36 rotates in the direction of arrow-head E, and engages with the slot 38 of a roller 24, and, as for a roller 24, rotation of arrow-head D1 direction is prevented by this. Since rotation inhibition of the arrow-head D1 direction of this roller 24 is inhibition of migration in the direction of arrow-head C of the input auxiliary seat 18, non-printed partial 18a of the input auxiliary seat 18 will counter a touch panel 16. Moreover, if a main power supply is that the electric current is cut off, since the electromagnet unit 34 cannot adsorb end side 36a of an arm 36 The force which engages with other end side of arm 36 36b in the slot 38 of a roller 24, and prevents rotation of the arrow-head D1 direction of a roller 24 is lost. By this The migration force of the input auxiliary seat 18 which is going to move by rotation of the direction of arrow-head B from a roller 20 cannot be overcome, consequently the input auxiliary seat 18 moves in the direction of arrow-head C,

and a roller 24 is made to be located in that printing partial 18b on a touch panel 16.

[0045] Since it is made to install the printing side for the alter operation of an input auxiliary seat on a touch panel automatically when the input auxiliary seat for the coordinate input of a ** is located near the touch panel by the above configuration at the time of interruption of service of a main power supply according to the gestalt 3 of this operation and the interruption of service is detected , it does [an operator / in interruption of service] alter operation of a touch panel using information required for the alter operation by which the printing publication is carried out and is convenient for the printing side .

[Translation done.]

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The circuit block diagram of the communication device with a compound function concerning the gestalt 1 of operation of this invention

[Drawing 2] The Main flow chart with which explanation of the gestalt 1 of operation of operation is presented

[Drawing 3] It is a processing flow chart during the transmission with which explanation of the gestalt 1 of operation of operation is presented.

[Drawing 4] It is a processing flow chart during the reception with which explanation of the gestalt 1 of operation of operation is presented.

[Drawing 5] The rechargeable battery monitor flow chart with which explanation of the communication device with a compound function of the gestalt 2 of operation of this invention of operation is presented

[Drawing 6] The communication link impossible condition flow chart with which explanation of the gestalt 2 of operation of operation is presented

[Drawing 7] The perspective view of the important section of the gestalt 3 of operation of this invention in the condition of a main power supply being in an energization condition, and having installed the non-printed part of an input auxiliary seat on the touch panel

[Drawing 8] The perspective view of the important section of the gestalt 3 of operation of this invention in the condition of a main power supply being in an interruption-of-service condition, and having installed the printing part of an input auxiliary seat on the touch panel

[Drawing 9] The top view showing the structure of an electromagnetic-clutch unit in case the main power supply in the communication device with a compound function of the gestalt 3 of operation of this invention is in an energization condition

[Drawing 10] The top view showing the structure of an electromagnetic-clutch unit in case the main power supply in the gestalt 3 of operation is in an interruption-of-service condition

[Description of Notations]

2 Touch Panel Recognition Data-Processing Section

2e Touch panel

4 Liquid Crystal Back Light Section

4a Liquid crystal display

4b Back light unit

6 AC Input Section (Main Power Supply)

8 Dial-up Line

10 Power Extraction Section (Auxiliary Power)

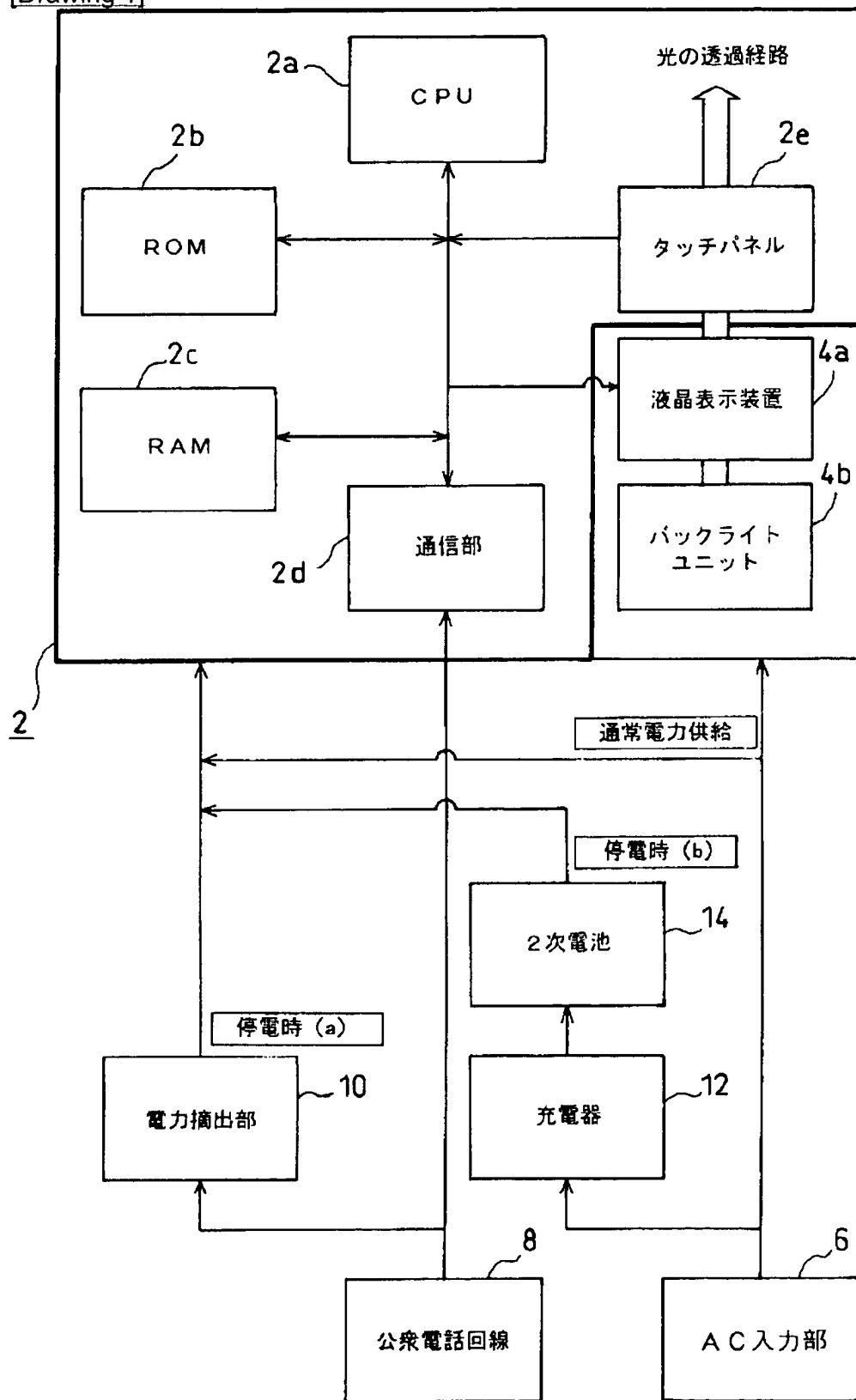
12 Battery Charger

14 Rechargeable Battery (Auxiliary Power)

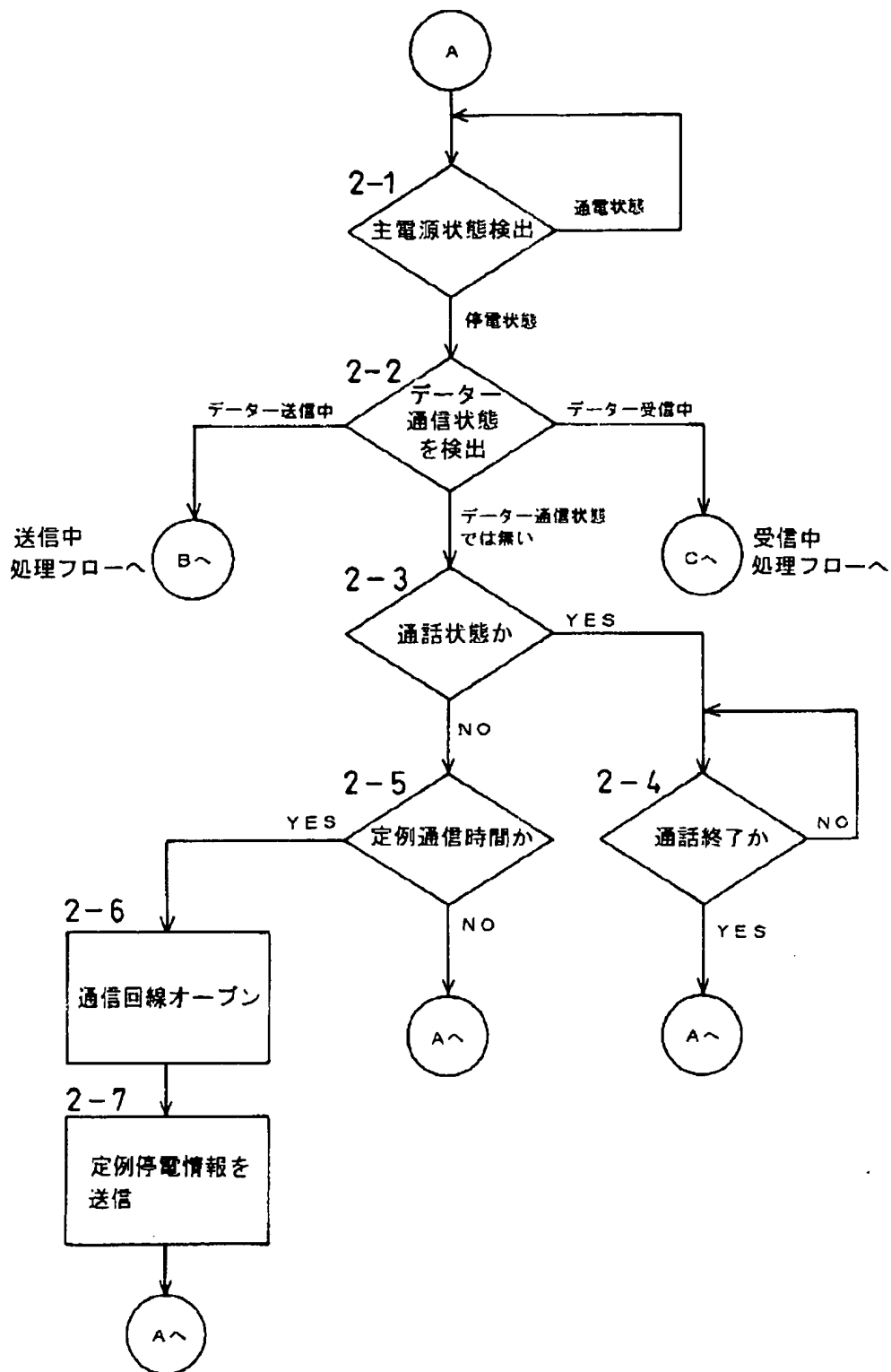
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DRAWINGS

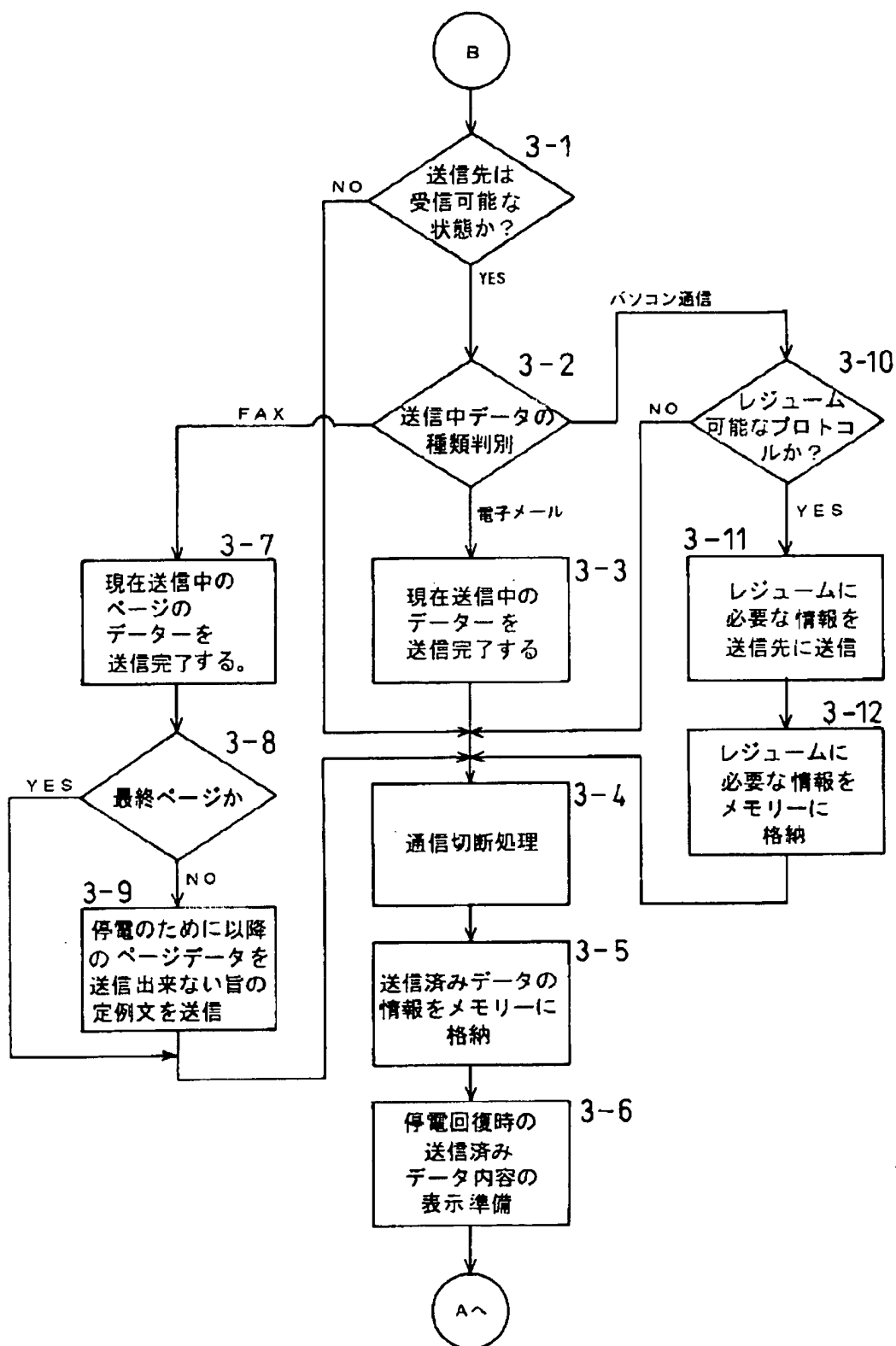
[Drawing 1]



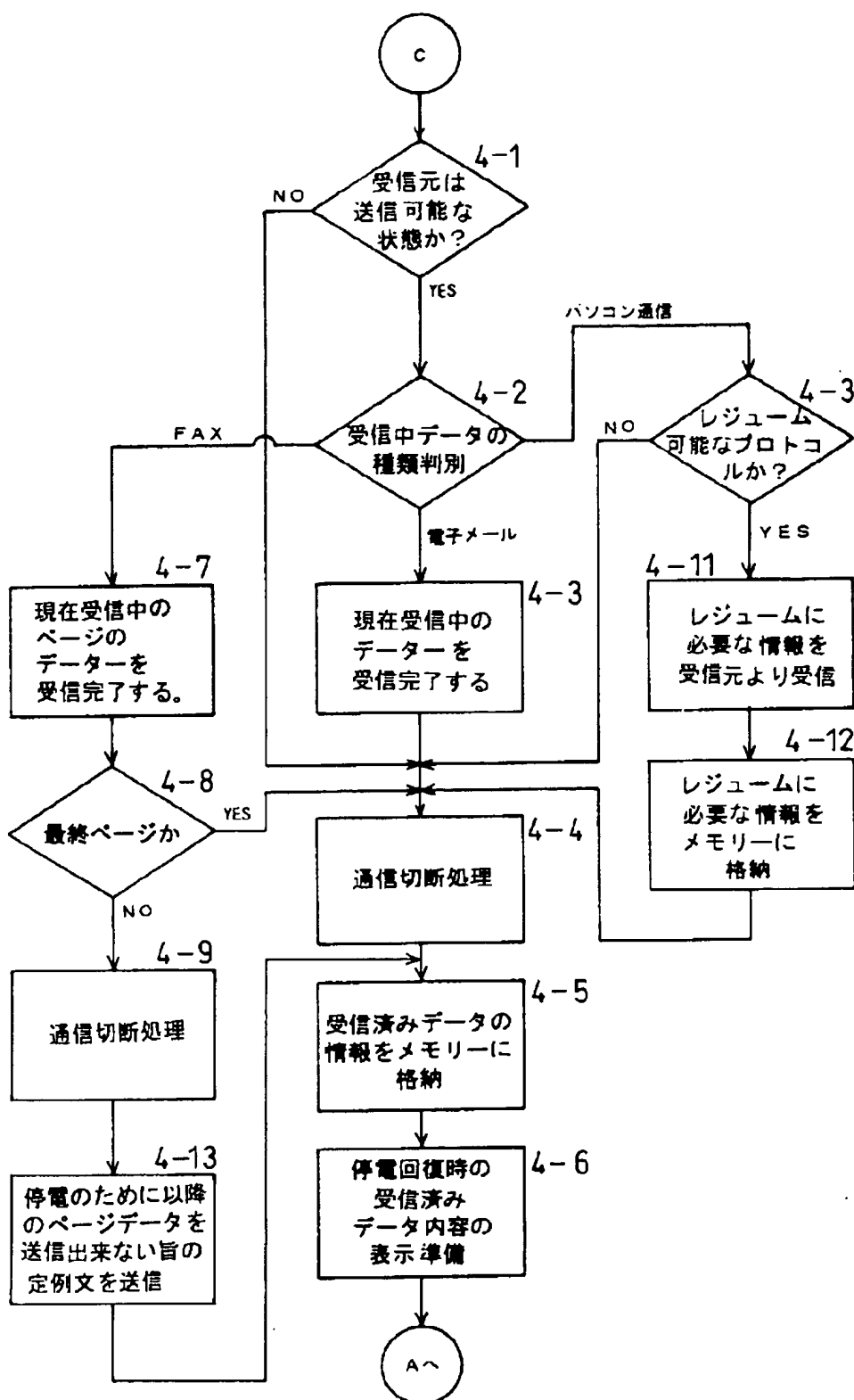
[Drawing 2]



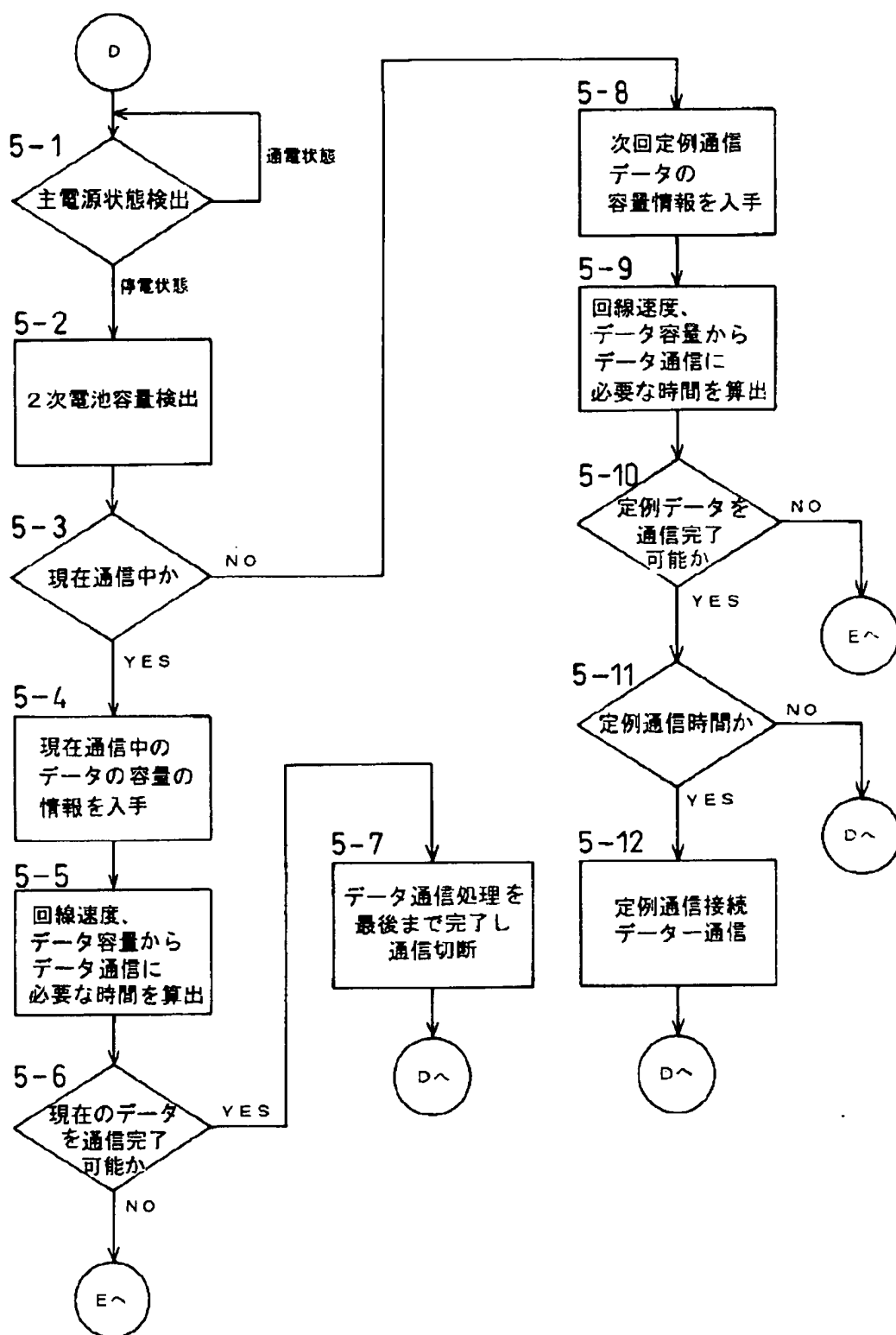
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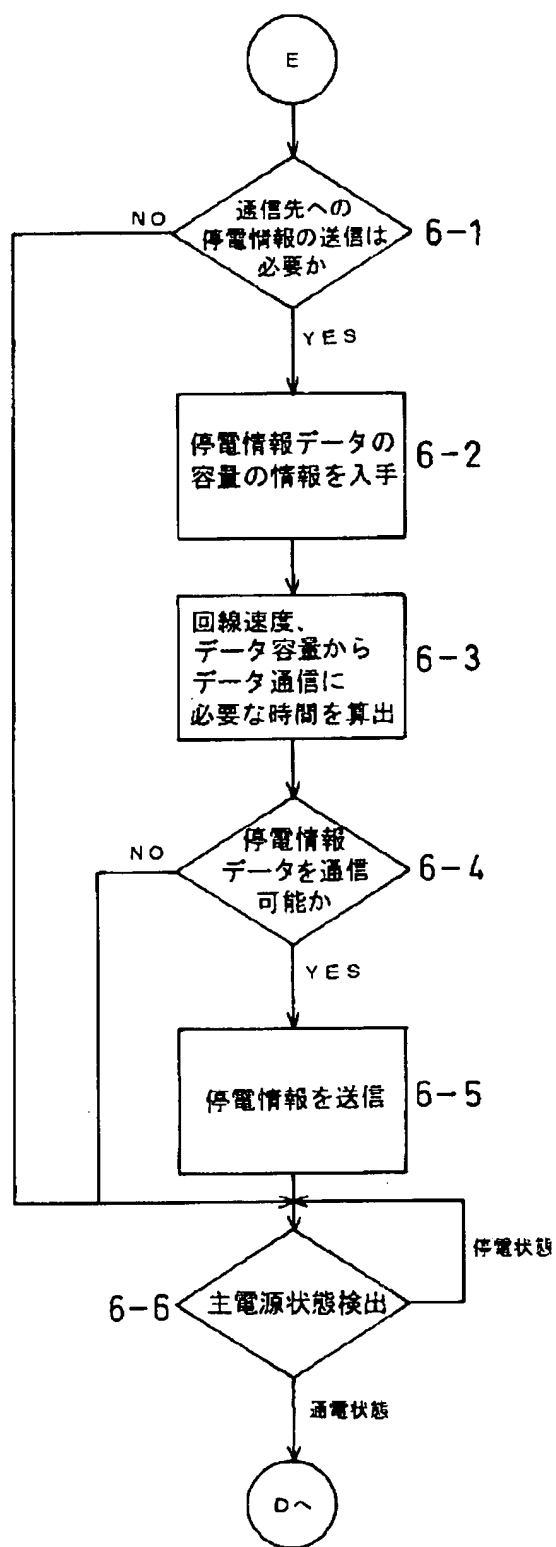
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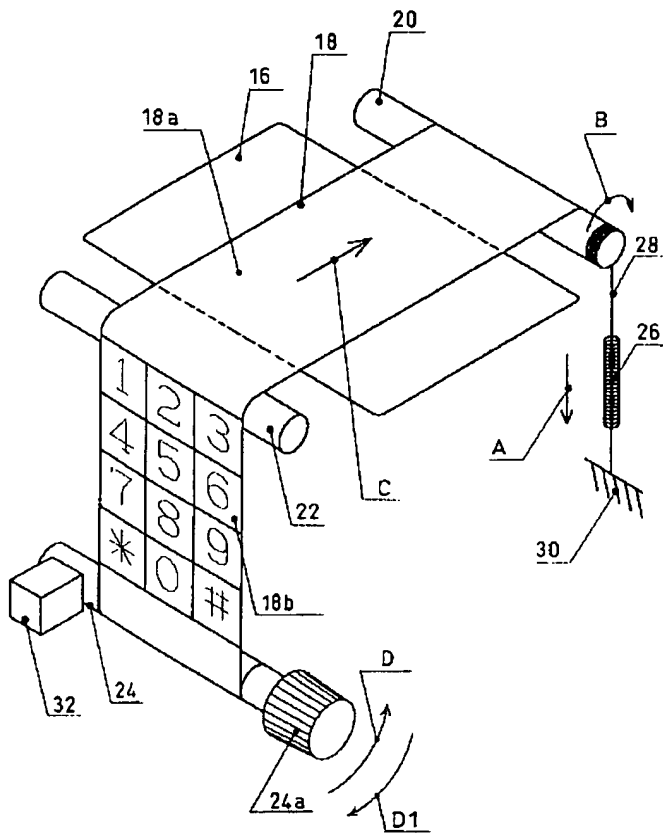
[Drawing 5]



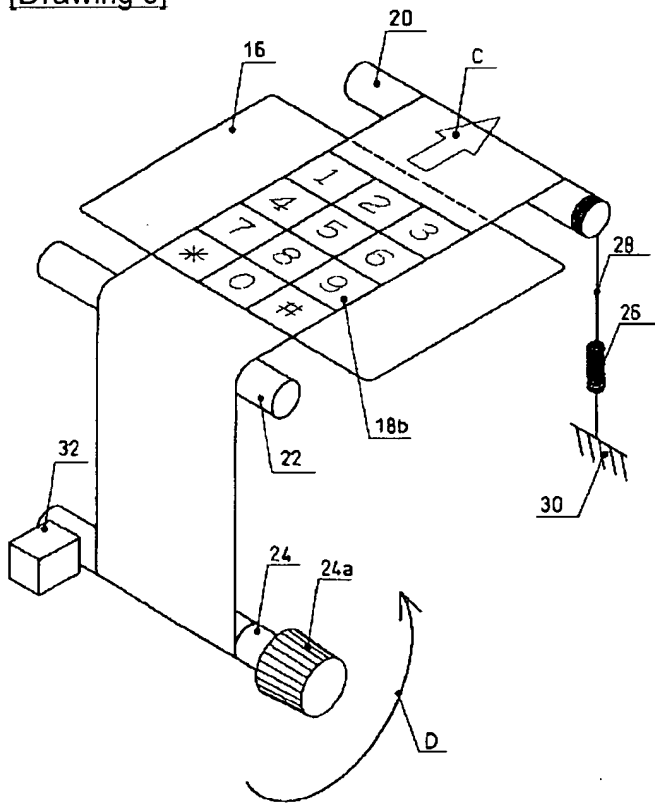
[Drawing 6]



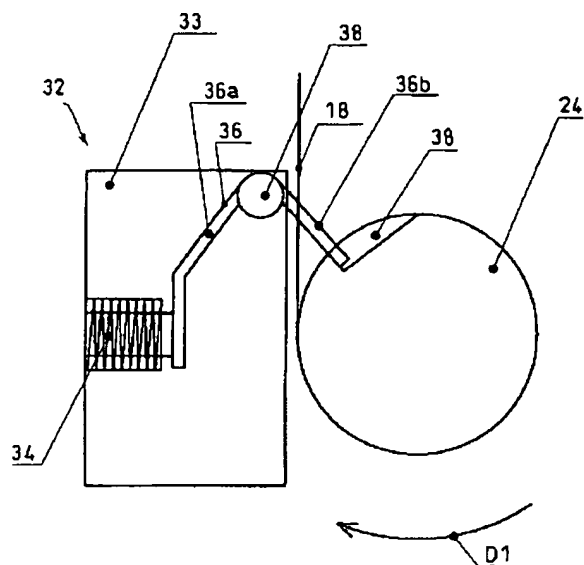
[Drawing 7]



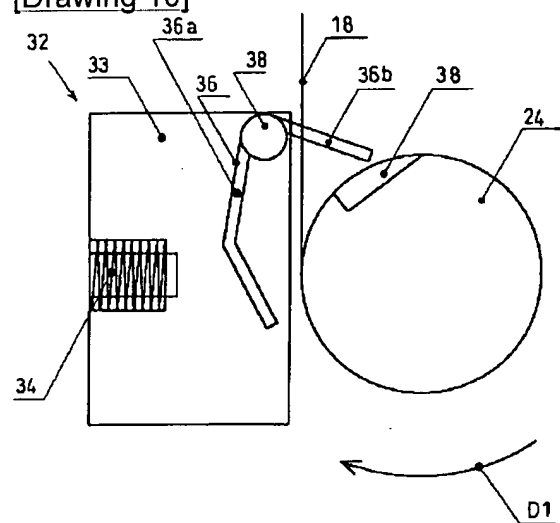
[Drawing 8]



[Drawing 9]



[Drawing 10]



[Translation done.]